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ABSTRACT

Naturalistic ethnographic research methods useful for the study of the dynamics of effective college teaching are discussed based on the findings of an ethnographic study. Naturalistic research methods were used in the study to understand better the task and social dimensions of a college classroom. Lessons were studied in the classroom as they naturally took place. Multiple methods were used to attain data from the perspective of the instructor, students, and researcher. A descriptive model of class dynamics was developed that describes how the lesson developed, how behaviors were interpreted and instructional decisions made, and how roles change. These dynamics are represented in a flow diagram, instructor decision tables, and analytic summaries of key parts of the system. The method and findings have implications for interaction theory and for improving college instruction. (SW)

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An Ethnographic Study of the
Dynamics of the Interactive
Process in a College Classroom

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While effective college instruction can be identified, we know less about how effective systems function. How do effective instructors help students learn and increase their desire to learn? How do they establish rapport? How do they achieve their results? As educators who are concerned with the quality of instruction in higher education, we need to learn more about the internal dynamics of the teaching, and the learning process in the classroom. One reason we know little about the internal dynamics of classroom instruction is because we have been limited in the research methods which study such dynamics. Some researchers are now using naturalistic or ethnographic methods to study, describe and analyze interactive patterns of behaviors in educational settings. (Wolcott, 1973; McDermott, Gospodinoff and Aron, 1977; Mehan et al., 1976; Erickson, 1975, 1966, 1977; Florio, 1978; Moore, 1977, Cooper, 1979).

The main purposes of this paper are: first, to present naturalistic ethnographic research methods useful for the study of the dynamics of effective college teaching; second, to present some of the results of one such study, as an illustration, and third, to explore some implications of naturalistic methods to better understand, diagnose and evaluate instruction.

Perspective:

Researchers using ethnographic methods to study interactions in educational settings have found that the teacher and students determine what is taking place

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in the lesson both academically and socially. To do this the teacher and students keep track of both what is said, the task related information; and how it is said, the tone of voice, inflection, gestures, body position, and location in the classroom. This information is interpreted by the teacher and students and decisions are made about what is appropriate to do next.

Research Process and Methods:

Naturalistic research methods were used in this study to understand better the task and social dimensions of a college classroom. Lessons were studied in the classroom as they naturally took place. The research process was inductive. That is, decisions of what to observe were not made a priori. The research process was also iterative and developmental, the questions asked determined the methods used and multiple corroborative measures were used to assess the same event and to cross check findings. The research process began with broad questions, methods were selected to match the questions, data were gathered, patterns of behaviors were sought, tentative hypotheses or "hunches" were developed, and more questions were asked to check hunches about behavioral patterns. The cycle of questions, data collection, hunches and questions continued until it was possible to represent some of the components and dynamics of the instructional process in a visual and narrative descriptive model. The model needed to be consistent with the meanings and purposes of the participants to be valid, for it is the participants' meaning system we wish to uncover and describe.

This study began with broad question(s) about instruction. For example, one question was, how do the instructor and students interact to realize their teaching and learning goals? Disciplined classroom observations and notes were

the preliminary and primary methods used to address this question. The interpretation of observations produced some patterns of behaviors, hunches, more questions about how the instruction process worked and the beginning of the descriptive model of the dynamics of the instructional process. Intermediate questions were then formulated about the general patterns of observed behaviors. For example, do the instructor's roles change during the instructional process? If so, why, when, and what is the effect? Methods were selected to assess the participants' views of the interactions, such as videotape recordings of class sessions and individual videotape review sessions with the instructor and students. Interviews and post-course questionnaires were also used. The patterns of behaviors, tentative hypotheses, questions and the descriptive model were expanded and refined. More specific questions were asked example, what are the instructor's behaviors that allow students to talk about and respond to the instructor in different ways? Systematic, detailed analysis of the videotapes resulted in the documentation of the behaviors that participants' referred to as meaningful. The descriptive model of the dynamics of the instructional process was then completed.

Observations in the classroom were used to record and clarify the flow and patterns of behaviors. Observations served another unique, unifying function in the study. There was a continual interplay between the observations in the classroom and other sources of information. Through observations and observational notes, information was cross-checked, insights often manifested themselves, questions were raised, hunches were explored and the total research process was monitored (Schatzman and Strauss, 1973).

Videotapes provided permanent visual and auditory records of the instructional event. The individual videotape review sessions with the instructor and students were held to locate patterns of behaviors that had meaning to the participants. Often the videotape jogged the memory and brought to the foreground information the participants were not consciously aware of which in the event itself. Later, the videotapes were also viewed independently by the researcher to analyze patterns of speech and actions that were located during the review sessions. This method of collection of data for later analysis of interactions in an educational setting has been recently used by Erickson and Shultz (1977), Florio (1978), Moore (1978), Mehan *et al.* (1976), and McDermott (1976).

Interviews provided the opportunity to ask class participants general and specific questions and to probe when comments were made or when questions were asked. There was an opportunity to direct the flow of information in order to clarify, supplement, support, or correct impressions. The post-course questionnaire was a written list of questions which was used to obtain a sample of student opinions concerning the instructional process in the classroom.

Data Source:

A college instructor was selected for study based on recommendations from his colleagues and students; he was considered to be an effective, successful teacher. The instructor and his class were studied for two ten-week terms; fall, 1977, and winter, 1978. The course, Discrete Time Systems, is a basic, required course in Electrical Engineering and Systems Science at Michigan State University. Of the 47 students Fall Term and 43 Winter Term, the majority were

juniors in electrical engineering, or specifically, systems science; the other students were in related engineering programs.

Findings:

The dynamics of the instructional process in the class studied are presented in a descriptive model. The descriptive model represents narratively and visually the interactions of some components of the systems which were functionally relevant for the participants. Some of the types of dynamics discovered were: how the class progressed from beginning to end; how the instructor and students made decisions during the lesson and acted in situationally appropriate ways, and how the instructor's "roles" changed during a lesson.

A Descriptive Model of the Dynamics of the Instructional Process:

The patterns of behaviors formed a framework of the class session. The class consisted of three major parts: preclass, warm-up, and instruction -- and transitions between these parts (See Figure 1 and Tables 1 and 2). Each part had its own structure, and purpose. Also the instructor and students had their specific ways of acting in each part. What was talked about and how it was expressed varied across and within the parts of a class session. Transitions between the parts of the class were marked by a number of verbal and nonverbal cues which indicated to the participants and the observer that a change was taking place. Changes were of two types: tasks (what they were doing together). It is important to note that the framework was initially inferred by analysis of behavioral shifts and that the terms were not used by all participants. Rather the parts of the class were informally aspects of their knowledge. That is, they displayed rather than talked about their knowledge. Participants were able to reflect upon and talk about their informal, but very important, operating knowledge through the use of stimuli like the videotape review sessions.

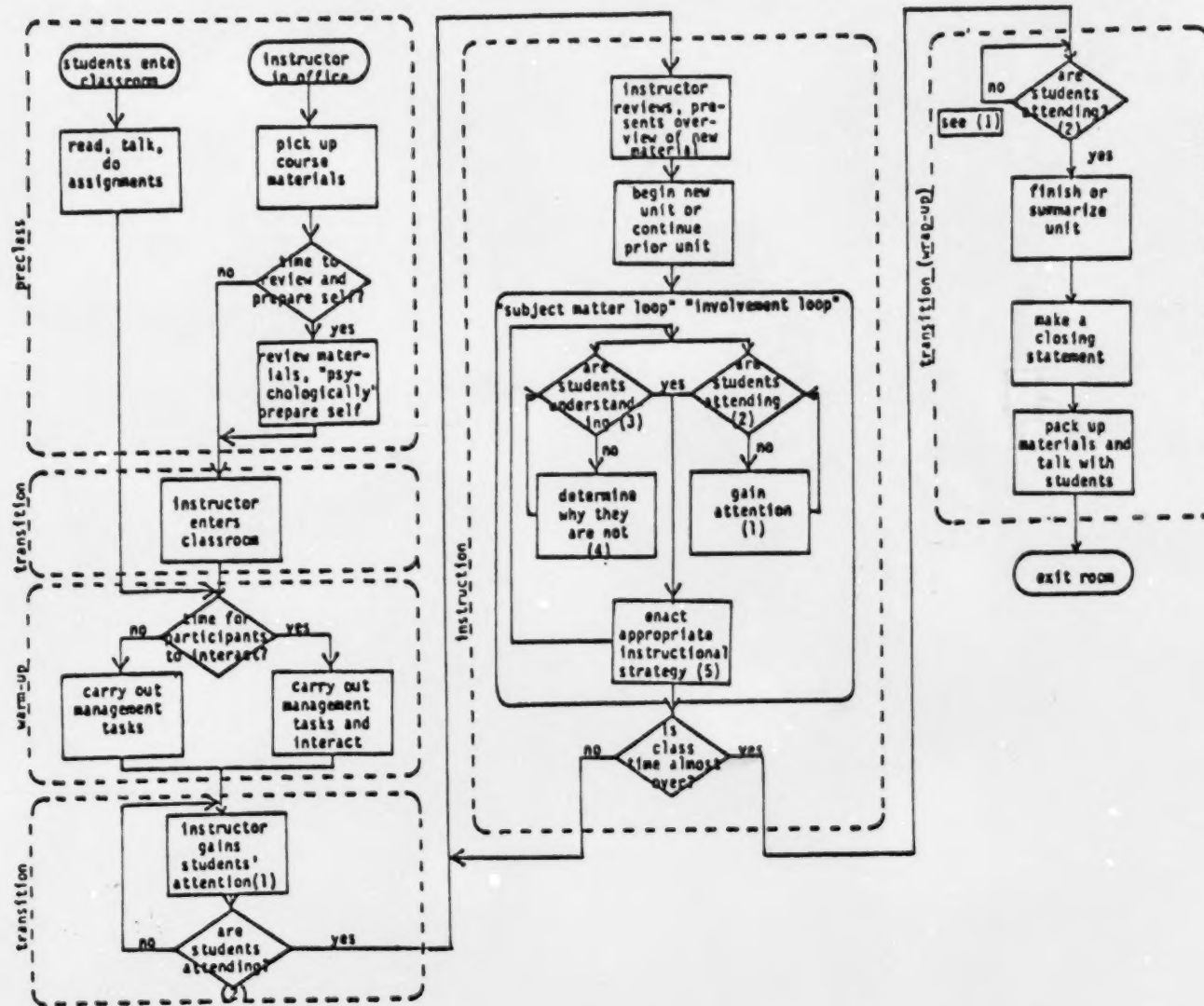


Figure 1. Flow diagram of a typical class session: An overview of the dynamics of class interaction.

Table 1. The instructor's decision chart: A component of the dynamics of the instructional process.

(1) <u>To Gain Attention</u> Nonverbal behaviors change position in room move closer to students increase gestures arm movements facial expressions vertical movements change pace faster or slower Verbal behaviors change volume soft to loud to soft use of pronouns "How can we do this?" "What should I do?" use of humor planned spontaneous pose questions rhetorical for students to answer lead "down garden path" mock "authority role" - German accent meaningful examples relate to past learning tell them what they can now relate to future uses in and out of class tell an untruth-spring it on them (attending but not focusing on meaning) cue word "all right now" "ready?" "Today we're going to...." "Next time...."	(2) <u>Cues if Attending</u> Nonverbal behaviors facial expressions appropriate to what instructor is saying eye contact nods respond to false statement sitting still awake Verbal behaviors answering questions appropriately asking appropriate questions (3) <u>Cues if Understanding</u> Nonverbal behaviors nod head yes no quizzical, puzzled looks do not shake heads Verbal behaviors answering questions appropriately asking appropriate questions	(5) <u>Appropriate Instructional Strategy</u> Transparency sheets-overhead projector outline of central points organizes and highlights for students and instructor all "side conditions" - supplement if something is missed Chalkboard explanation of difficult concepts from transparencies or student questions explanations on the conceptual level Front of platform/pole walk through logic step-by-step view from student's perspective help students use their intuitive logic increase student involvement "preaching at" - "Wait a minute, what does this mean?" make them think through a concept
	(4) <u>How to Determine Why Not Understanding</u> "test" by asking questions ask more basic questions they can answer, work up to more difficult (most effective) backtrack until consensus there ask students what is wrong (least effective)	

Table 2. Framework of a typical class session: An overview of the dynamics of the instructional process.

Segment:	<u>Preclass</u>	<u>Warm-Up</u>	<u>Instruction</u>	<u>Wrap-Up</u>
Time:	end of prior class	five minutes prior to scheduled class time	scheduled class time	last 5-10 minutes of scheduled class time
Transition Cues (enter):	prior class leaves classroom	instructor enters room	instructor's location in room, gestures, voice more projected, subject matter is topic, asks question, presents a problem, attention getting statement.	pace of instruction increases, increase attention grabbers, students may be more restless.
Dominant Events:	students find seat; read paper, notes; discuss homework if due. Few converse. Instructor picks up course material; if time review materials and "psychologically" prepare self.	1. management: instructor prepares room and passes out papers. 2. warm-up: interacts with students, jokes, relates events of interest, discusses problems, answers questions; warms class up, gains attention, reduces tension	subject matter emphasis 1. introduction-attention getter* a. related to past chapters, learning b. why important to learn c. tie into future in and out of course 2. presentation of information a. transparency-information b. blackboard-explanation c. moves closer to students front of platform or pole-view as students do, problem solving 3. summary-tie together a. tie to past learning b. now what you can do c. how will use in future in and out of course *This three step process is used for a. little introduction for each lecture b. major introduction for each chapter c. little introduction for each unit in a chapter	1. review of "what we saw today", implications and applications, expands whole lecture 2. preview of "what's coming" 3. relates next class
Transition Cues (end):	instructor enters briskly	typically abrupt, end of management duties, scheduled time	looks at watch, scheduled class time nearly up	verbal-closure statements, asks if homework in, or picked up, nonverbal-pick up materials

The Preclass Segment occurred between classes, and ended as the instructor entered the classroom. Students appeared to use this time to relax, read, or finish assignments. The instructor talked about using this time to prepare course materials and "psychologically" to ready himself for teaching. When he did not have time to ready himself, as was often the case winter term, he felt it had a negative effect on his teaching.

Warm-up began as the instructor entered the classroom, conducted management tasks, and ended as he typically moved to the overhead projector or closer to the students to begin instruction. Warm-up served two functions simultaneously. The instructor conducted management activities (he passed out or collected assignments or tests) and interacted informally with the students (made humorous comments, discussed current events, or student and instructor experiences). The instructor said his intentions were to create an open, receptive, relaxed situation to maximize the students' involvement in the instructional process. As an example, while reviewing a videotape five of the six students stopped the tape on their own comment on the two functions of the "warm-up" component:

He keeps things human with his comments. He enjoys what
he's doing.
He warms up the class a little, gets us ready.
He's personable and interacts with students. It helps if
you're not tuned into the class.
He just finished bookkeeping.
He's taking care of preliminaries.

By his actions during warm-up the instructor seemed to fulfill two roles, he was a "manager" attending to the requirement of the class and he was a "person". As one student said "he keeps things human."

Instruction began as the instructor moved to the overhead projector or closer to the students and began to talk about course content. During an interview he stated that instruction was based on two interactive, cyclic "loops": the "subject matter loop" based on the content of the course, and

the "involvement loop" based on the students' involvement in the instructional process. Instruction ended during "wrap-up," a transition to the end of the class session.

To help students learn, the instructor presented information in an organized manner from the transparencies, explained difficult concepts at the chalkboard, and helped students use their own logic as he viewed the problem from their perspective. If he did not attain a desired response he had a repertoire of behaviors; he changed his questioning strategy, mode of presentation, and examples he used. To keep students involved, he moved closer to the students, gestured, varied his voice, provided cue words, and used humor (See Table 1). He stated that he did not always consciously make behavioral decisions, they just felt natural. That is, he didn't plan most of these behaviors nor did he always report on them directly. The behaviors and the causal inferences were initially drawn analytically and were supported through participant behaviors and reflection upon those behaviors.

The parts of the class session were connected by transitions. Transitions are of interest because they are points in the instructional event that indicate a change in the shared purposes and the context of the participants' interactions. Transitions are indicated by changes in communication behaviors (McDermott, 1977).

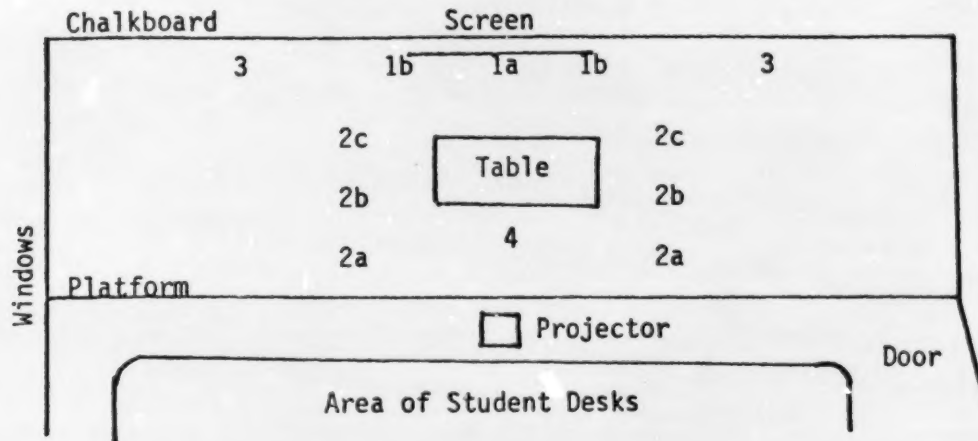
The transition between preclass and warm-up was marked by the instructor's entry into the classroom. The transition between warm-up and instruction was indicated by his movement from the course material on the overhead projector or closer to the students and by verbal and paralinguistic cues such as the projection of the voice, an opener (ok...), and a review of the previous class. The transition from instruction to the end of the class was described by the instructor as the "wrap-up". The students and the instructor commented that the tempo seemed to

intensify as he increased his efforts to maintain student involvement and to "control the class until the end." One student commented during a videotape review:

I was surprised when he suddenly stopped...I expected him to go on...I don't watch him for signs that he's going to finish...He doesn't wind down...He keeps going to the end...

The dynamics of the instructional process were also examined in terms of how people interpreted behaviors in order to determine what was taking place in the lesson. For example, some patterns of behaviors were designated by the instructor's position in the room - at the screen, closer to the students, at the chalkboard, and a composite position by the screen (See Table 3).

Table 3. The instructor's use of space was interpreted by students. During instruction his use of space varied with what he was doing as he monitored, interpreted, and responded to students' behaviors.



Instructor's Use of Space, Winter Term, 1978

<u>Position in the Room</u>	<u>Behaviors</u>
At the screen (1a)	Presents basic structural content of course, selectively reads and points to information on screen. Looks at screen, asks rhetorical questions.
Closer to students (2 a, b, c)	Reflects on the logic of information, provides examples, asks questions which require and allow for an answer, uses colloquial phrases, models an experienced learner. Looks at students, increases frequency and intensity of gestures, varies volume and rate of speech. (Participants are more likely to stop the videotape to comment on the instructional process.)
By the screen (1b)	A composite of "at the screen" and "closer to students" behaviors. Develops, explains, illustrates, asks questions about meaning of concepts on the screen. Looks half the time at students and half the time at the screen. Students are more likely to respond to questions than if he is "by the screen."
At the chalkboard (3)	Explains difficult concepts, responds to students' questions, elaborates. Looks at the students and at the board. Similar to the "by the screen" behaviors.
By materials (4)	Organizes, passes out, collects or selects materials.

An example from observational notes illustrates how he moved from the screen to the pole to examine the information from the students' perspective.

The instructor puts on a new transparency and says: "This is a real sleeper...this one will sneak up on you and get you, so watch out for it... (The instructor asks a question and the students respond.) "That's good..." (He explains the new concept while standing by the screen and looking around the room at the students.) "Some of you may get confused on this point..." (Points to the equation on the screen,) "let's think it through..." (He moves to the pole and looks at the screen and students. He moves logically through the problem.)

The instructor referred to his movement closer to the students as feeling natural as he viewed the problem from their perspective.

While the instructor's behaviors were available for the students to observe and interpret, the students' behaviors were also observable and interpretable. The instructor referred to the students' behaviors that he observed and made inferences about their understanding of or involvement in the instructional process. These behaviors are summarized in Table 4 (Number 2,3, and 4). Based on his inferences from monitored behaviors, the instructor acted to maintain or modify the process of instruction. His typical behaviors are summarized in Table 4 (Numbers 1 and 5).

Through closer examination of what the instructor said, it was possible to document some variations in his use of pronouns of address. Brown (1970) talks of pronouns of address as indicators of two dimensions of social relationships. Power is a nonreciprocal relationship, one person has some form of control over another. Solidarity is more a reciprocal and symmetrical relationship.

The instructors "roles" varied across the different parts of the class session. His "roles" in the teacher student relationships were examined in terms of his pronouns of address. Of the four relationships two indicated relationships of power, the teacher-as-manager and as a teacher-expert; and two indicate

relationships of solidarity, the teacher-as-a-person and as-an-experienced learner. Table 4 illustrates the instructor's roles as indicated by pronouns of address and the functions of the pronouns in the syntactic context.

Table 4. The instructor's "roles": A component of the descriptive model of the dynamics of the instructional process.

The instructor's "roles" varied across the different parts of a class session. His "roles" and the instructor-student relationships, as indicated by the pronouns of address, are presented.

Role as Instructor	Instructor-Student Relationship as Indicated by Pronouns of Address	Example
<u>Manager:</u> responsible for course requirements	I am giving, assigning, returning something to <u>you</u> . I am the instructor - manager, (a position of power).	"I have a homework set for <u>you</u> ." "I'm returning a set of papers to <u>you</u> ." I promised <u>you</u> a hand- out of tables <u>you</u> can use whenever you want.
<u>Person:</u> fellow human being	<u>I</u> am doing or did something that tells <u>you</u> something about me as a person. I am a person - (a position of solidarity).	(The instructor makes an error and students laugh.) "I owe you guys one....I'll get you next time..." (When passing out tables). "Well, <u>I</u> haven't decided, should I sell em or give em away?"
<u>Teacher-expert:</u> facilitator of student learn	I am doing something to or for <u>you</u> to help you learn. I am the possessor of knowledge - (a position of power). <u>We</u> are doing or did something together. <u>We</u> are people - (a position of solidarity).	"I'll show <u>you</u> intuitively how you get it..." "Let me ask <u>you</u> first..." "I'm going to lead <u>you</u> down the garden path and zap you..."
<u>Experienced learner:</u> modeler of the thinking process	I am modeling a way <u>you</u> could be thinking about this problem. I was at one time like you - (a position of solidarity).	"How can <u>I</u> do that?" "What can I expect?" "What do <u>I</u> assume?"

During warm-up the instructor intertwined the roles of a manager of the class responsible for materials and assessment (a position of power); and a person involved in an event with others (a position of solidarity). The instructor is simultaneously a manager-person when he asks:

How many of you remember we have an hour exam in here on Friday?...That's good...the rest of you...we have an hour exam in here on Friday...

The business of announcing the exam, a position of power was accomplished with humor, an appeal to solidarity.

The instructor's pronouns of address also varied with what he was trying to do academically and socially. For example, during the "subject matter loop" the relationship was at times I am the "teacher-expert" and you are the student-novice. As the teacher he had power in the form of knowledge. For example, during class he said:

Now I'm going to show you just one period of the thing...
Let me show you the dark line here...the dark is what
I get if I just add the constant plus the first term which
you know...

As the teacher-expert, the instructor was facilitating student learning and doing something to or for the student to help them learn. He was "showing" them how to do something. During the "involvement loop" the relationship might include I am a "person" - a fellow human-being like you, a relationship solidarity: For example

(The instructor makes an error during the lecture and students laugh) I owe you guys one, I'll get you next time...

The reference to "owing the students one" is an act of social subordination of one's self to others. Goffman refers to this as "role-distancing", (1961).

As a fellow human being the instructor was commenting on himself rather than doing something to or for students. During the "involvement loop" the relationship

might also include I am an "experienced learner" - a modeler of the thinking process.

For example:

How do I do that? What can I expect? What do I assume?

Students were asked questions much like an experienced learner might ask himself of herself. As an experienced learner the instructor was demonstrating how he progressed through a problem as if he was a learner.

The predominate pronoun the instructor used was we, a suggestion of solidarity
For example:

We want to start talking about digital filters...
Before we can get into the design we want to talk
about what we're filtering...

The instructor and students were not always consciously aware of these social roles, actions and perceptions, they monitored and interpreted. When participants stopped the videotape during review sessions their comments were generally interpretative rather than behavioral. For example, the students talked about how the instructor was relating to them rather than the talk and actions that formed the basis of their inferences.

The videotapes, however, served as a stimulus that often brought meaningful behaviors to the viewer's level of conscious awareness. Students became aware of the instructor's behaviors and how they were interpreting them. One student discussed the fact that viewing the videotapes and assessing how he listened and took notes had influenced his behaviors in other classes. The instructor became more aware of his own behaviors. He became more aware of how often he looked at the student feedback, of instructional techniques he used, and that he did not always give sufficient cues or leave adequate time when he wanted the students to respond to questions. A major insight into his communicative behaviors occurred as the instructor was viewing the third videotape:

When I'm in the position that I think they're in, the position where they now understand and I can just ask them to apply it--- then I can be excited with them about what they can now do... that's what the dynamics are there...that's what's causing that high intensity thing...'cus I'm feeling from their part.... Oh...yes...that's what gets me excited when I'm reflecting what I expect them to be feeling.... That's interesting...I hadn't thought about that exactly before...when I get "revved up" in that situation is because that's what I'm seeing on their part ...when I feel that I really got that part communicated and I can give an example and let them see they can use it.... I get most excited when I'm telling them...how they will act and feel...not only the information they will have.... This is the first time I was aware of that...I'm really excited about this.... I'm programming them...reinforcing that behavior.... It forces them to stay with me and what I'm saying.... I imitate the response I want them to feel.... It would be nice if there was some way that you could harness that...and point out how they will feel when they understand something...I tell 'em how I feel...I want them to have the same feeling.... It makes it more exciting for them....

Implications

There are two kinds of implications from this study: implications for instructional development and implications for ethnographic research in classroom interaction. Both kinds of implications will be discussed.

Implications for Instructional Development

Educators involved in instructional development are interested in (1) the diagnosis of instructional systems, (2) the design and development of instructional systems, and (3) faculty improvement via in-service teaching. The implications of this study will be examined in terms of these three interests.

Instructional developers diagnose instructional systems to locate problems and strengths. Questions that are often asked are "What is going on here?" and "What is working and what is not working?" Instructional developers often have difficulties in gaining access to the internal workings of a system to begin to answer these questions.

Building descriptive models helps bring to the level of conscious awareness the tacit knowledge and "common sense" understandings of the participants.

Participants can begin to operationalize how they attend to behaviors, how they interpret those behaviors and how they make decisions. Locating these functionally relevant behaviors leads to the development of patterns of behaviors. Understanding behavioral patterns helps locate the strengths and problems in the instructional system.

Studying the dynamics of instruction and creating models can reveal to an instructional developer and participants, social relationships that are developed, how they are developed, when they change, and the effects of change on the process of instruction. Relationships are of interest because they are jointly created and negotiated in the lesson and influence the dynamics of the instructional process. Building and examining descriptive models helps make these dynamics apparent, behavioral and open for change.

In the model building and diagnosis process, people are in the position:

- (1) to study the dynamics of the instructional process as they naturally occur and to avoid constructing or reconstructing events as they think they occur;
- (2) to see the system as a whole and avoid isolating behaviors out of context;
- (3) to examine events as the joint responsibility of the instructor and students and to avoid placing sole responsibility on either;
- (4) to analyze what is working or not working based on how participants interpret and produce behaviors and to avoid prematurely defining problems based on superficial information or on information primarily from the outsider's perspective.

Instructional developers design and develop instructional systems. They ask: "What will work?" or "What can we improve?". Gaining access to a system and displaying the dynamics in a descriptive model can facilitate this process.

Instructional developers can design some aspects of a system, such as what will be presented, when, and by what means. Some aspects of the system are more

difficult to plan because they are situationally determined and jointly created by participants. In designing systems, instructional developers need to be aware of not only "what" will be said and done, but also "how" people will interact as they carry out the "what". Systems should not be viewed as "people proof" but as "people produced."

When designing systems, instructional developers remember that systems are holistic and should attend to the ways the parts of the system will function, interrelate and intersect. Transitions may be intersections of major parts of the class, such as between "warm-up" and "instruction," between lecture and discussion, or between major points or supporting points. Transitions may need specific attention to help the instructor and students logically and smoothly integrate parts to create a meaningful whole.

Model building helps explain why changing an instructional system is complex and often unsuccessful. Parts are so interrelated that what appears on the surface to be a logical improvement, may have neutralizing or adverse effects on other parts of the system.

By studying the dynamics of an instructional system prior to and during the developing process, instructional developers are better able:

- (1) to focus their efforts on behavioral changes that make a difference and avoid changes that are superficial, irrelevant, dysfunctional or disruptive; and
- (2) to understand the complexities of the system and its needs and avoid attempts to implement instant or "favorite" solutions.

Instructional developers perform faculty development via in-service teaching.

A goal for in-service teaching can be the understanding of the dynamics of the process of instruction. Instructors may be unaware of the ways students interpret their behaviors. Instructors may also be unaware of what student behaviors they

focus on, how they interpret these behaviors, how they decide what to do, and how they produce an instructional event. Through in-service training instructors can learn more about how their talk and actions are interpreted by others, as well as how they interpret and respond to student behaviors. Instructors can be helped to view students as decision-makers who are working to make sense of the instructional process.

The content of in-service teaching can be based on the models discovered by this form of research. These models may have more of a chance of being functional because they take into account the complexities of real classes.

By increasing understanding of the dynamics of instruction, instructional developers will be better able:

- (1) to help instructors understand the interactions in their classes;
- (2) to help instructors examine their own behaviors and how they are interpreted;
- (3) to help instructors analyze student behaviors they monitor and decisions they make based on their interpretations of those behaviors; and
- (4) to provide concrete advice and examples that are likely to function.

Implications for Ethnographic Research in Classroom Interactions

This study supports the findings of other ethnographic studies of school interactions and provides additional insights into the dynamics of classroom interactions. In support of prior studies, this study also illustrates the following findings. The teacher's verbal and nonverbal behaviors influence the instructional process and the subsequent interpretation of the instructional event (Byers and Byers, 1972; McDermott, et al., 1976). The participants'

common recognition of the changing structure of the event is correlated with changes in use of space (Erickson, 1976). While the teacher orchestrates the event, it is an orderly, joint production of all class participants (McDermott, et al., 1976; Mehan, 1976; Erickson, 1978; Florio, 1978). Yet there is an underlying commonality in the analysis of school speech events that may be an index of a general "school culture" (Florio, personal communication, April 1979) which cuts across age-grade levels.

This study suggests that there are various situationally determined and socially negotiated teacher and student roles in classroom interactions. The shifts in roles can be described and analyzed in terms of the part of the class the participants are "in," the focal activity, and the moment to moment changes in the event. These changes may be academically oriented (the students are or are not understanding the subject matter), socially oriented (the students are or are not involved in the instructional process, or the instructor and students are involved in nonacademic or humorous exchanges), or managerially oriented (the business of the course is the focal topic). In examining the intricacies of these changes in the event and shifts in roles, the instructor's pronominal usage and use of space turned out to be reliable indicators of the social relationships.

This study also illustrates that increased understanding of the instructional event can be attained by including the students in the inquiry process. Students, with their experiences and their interactional competence in the "school culture", located and provided interpretations of functionally relevant behaviors that could not be discovered any other way. Based on the students locating and talking about

the instructor's co-occurring behaviors, the detailed systematic analysis of his use of space, gestures, instructional exchanges and changing roles was possible.

Suggestions for Future Research

Future research can be suggested in four general areas: a continuation of descriptive studies of the dynamics of instruction in order to develop and compare models of effective instruction, diagnostic studies of instructional systems in order to use the inquiry process and methods to improve instruction in particular classes, evaluative studies to explore the use of the inquiry process and methods in order to make administrative decisions, and comparative studies to look for and to test relationships in order to determine if they hold in different situations.

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